Exhibit 21

IN THE MATTER BETWEEN

COEYMANS MARINE TOWING, LLC

Petitioner

-and-

NORFOLK AND PORTSMOUTH BELT LINE RAILROAD COMPANY

Claimant/Respondent

EXPERT REPORT OF W. N. MARIANOS AND CHARLIE CUNNINGHAM

R.L. BANKS & ASSOCIATES, INCORPORATED

Date: August 8, 2025

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I. Introduction and Qualifications

1. This Report was prepared by R.L. Banks & Associates ("RLBA"), a railroad consulting firm based in Virginia, at the request of counsel representing Coeymans Marine Towing, LLC d/b/a Carver Marine Towing ("Carver"). RLBA was asked to provide a third-party engineering and economic cost analysis of the legal case between Carver and the Norfolk & Portsmouth Belt Line Railroad Company ("Belt Line").

2. Specifically, RLBA was asked to review documentation germane to this matter, participate in an on-site visit of the Belt Line's Main Line Railroad Bridge ("MLRB") in Portsmouth and provide a written assessment of:

    - the condition of the MLRB at the time it was struck by a vessel operated/controlled by Carver on June 15, 2024;
    - the variables that may have affected the depreciated state of the MLRB as of June 15, 2024, and
    - an economic analysis of the appropriate damages to be paid by Carver to the Belt Line given the depreciated value of the MLRB as of June 15, 2024.

3. RLBA has utilized a sub-consultant and a senior staff member, working collaboratively, to complete this work and, specifically, co-author this Report. Those employees are Ward Nicholas Marianos, Jr. Ph.D., P.E., S.E. and James Charles Cunningham.

4. Mr. Marianos has been a self-employed, consulting bridge engineer since 2005. He has worked on railroad bridge design since 1984. Prior to his self-employed consulting work, Mr. Marianos was employed by Modjeski and Masters Engineering Consultants between 1985 and 2005. He has held academic affiliations with the University of Missouri-Rolla, Norwich University and the University of Houston. He is a member of the American Railway Engineering and Maintenance of Way Association, of which he has been a member in good standing since 1988.

5. Mr. Marianos has been involved in the review, rehabilitation, design and construction and inspection of dozens of bridges of all types, including moveable bridge structures, like the subject one. He received a B.S. in Civil Engineering from Tulane University, an M.S. in Structural Engineering from the University of California, Berkeley and a Ph.D. in Civil Engineering from Tulane University. Mr.

Marianos holds professional registration in twenty-seven states including the Commonwealth of Virigina. A more in-depth review of Mr. Marianos' education, work history and applicable experience can be found in Exhibit A.

6. Charlie Cunningham is a Senior Director at RLBA, a management consulting firm specializing exclusively in railroad matters, with offices in Virginia, Massachusetts, Georgia, North Carolina and Wisconsin.

7. He has been employed in the railroad industry space over 19 years, including separate stints in the railroad Operations and Contracts and Joint Facilities Departments at BNSF Railway Company ("BNSF"), a Class I railroad, and Business Development in the Rail Group at the Port Authority of the third largest port in the United States, the Port of New York and New Jersey and at RLBA. His expertise includes operations, railroad costing and economics, joint facilities, as well as service planning and financial analysis.

8. During his time at BNSF, Mr. Cunningham began as a management trainee going through a training process that included conductor qualification, switching in flat and hump yards, mechanical, engineering and dispatcher training before being sent to his first permanent work location in California. There, he traveled regularly across the division to learn the overall operations of the three main functional areas of railroading (operations, engineering and mechanical) including spending time with the Engineering and Signal departments across the state of California including review of bridge maintenance and rehabilitation projects. He then began his first, permanent role, serving in multiple positions of increasing responsibility in the Operations Department, initially handling the day-to-day logistics of train movements from and to the San Francisco Bay Area and advancing into a management role over the Northern California region, responsible for carload freight and intermodal traffic at numerous rail yards and facilities in that region.

9. After serving in Operations, Mr. Cunningham moved to BNSF's Contracts and Joint Facilities ("Joint Facilities") Group, a department that handles interactions between BNSF and other railroads, ports and government entities. His territory included the eleven states constituting BNSF's Southern and Eastern Regions, where the focus of his responsibilities included negotiating with other Class I Railroads, primarily Union Pacific ("UP") but including all of the then seven Class I's; working on agreements between BNSF, other railroads and ports; analyzing the most efficient and cost-effective routes BNSF trains should take in conjunction with the BNSF Service Design and Operating Teams

and educating operating teams on the rights and abilities they had to operate trains and service customers on other railroad lines.

10. Mr. Cunningham's role in Joint Facilities included drafting and negotiating agreements as well as serving as the primary resource to educate and advise BNSF operations staff on interpreting operating and maintenance agreements between BNSF and other carriers. Further, and particularly germane to this legal matter, Mr. Cunningham managed the budgets associated with agreements addressing joint use of railroad assets, including several dozen bridges. Mr. Cunningham was responsible for reviewing costs associated with bridge repairs, rehabilitations and new construction on bridge assets owned by BNSF but used by other railroads or vice versa.

11. Mr. Cunningham has been employed at RLBA since January of 2020. He has led and participated in a range of projects including litigation support where he has been qualified as an expert in operations and damages, operations analysis, railroad operations procurement, buy and sell side due diligence and financial valuation. He is currently the senior employee in charge of RLBA's valuation and due diligence work.

12. Mr. Cunningham earned a B.S. in Economics from Texas A&M University in College Station, Texas with a minor in Business. Exhibit B contains a list of Mr. Cunningham's prior experience and qualifications.

13. This Report will refer collectively to Mr. Marianos and Mr. Cunnigham as "RLBA" when referring to their collective opinions and, if necessary, as individuals where their specific backgrounds and credentials are particularly applicable.

II. Nature of Engagement / Purpose of Report

14. RLBA understands from a review of relevant documents that a tugboat was operated by Carver in Southern Branch of the Elizabeth River ("River") between Norfolk and Portsmouth, Virginia on June 15, 2024. The tugboat was pushing a 200-foot loaded barge outside of the navigable channel of the River when, it is alleged, that the barge struck the Belt Line's MLRB on the southwest side of the bridge's fourth span causing structural damage and rendering the bridge unusable until repairs could be made (the "allision").[1]

[1] D25 2024-12-05 Claim by NPBL Railroad.PDF

15. To date, the damages claimed by the Belt Line to repair the bridge are approximately $15.5 million dollars.[2] The damages include engineering design work done by Hardesty & Hanover, LLC ("H&H"), bridge repair work done by PCL Civil Constructors, Inc. ("PCL"), Belt Line crews, maintenance-of-way and yardmaster wages and several other contractors charging smaller amounts related to ancillary items needing repairs on the MLRB after the allision.

16. RLBA was asked to review documents related to the reasonableness and appropriateness of MLRB repair amounts. In addition, RLBA was asked to assess the depreciated state of the MLRB, which was built in 1958, and what impact that depreciation should have on the amount of damages Carver should reasonably bear to compensate the Belt Line in connection with the allision.

17. To assist in drafting this Report, RLBA has reviewed documents provided by the Belt Line and H&H in connection with the Belt Line's adherence to the mandatory bridge management program, prior bridge inspection reports, emails and text messages during the repair process, invoices submitted for work done to repair the MLRB, depositions of Belt Line and H&H employees and the expert reports of Kevin Lugo, YA Engineering Services and Lee Lentz. In addition, Mr. Marianos conducted a site visit of the bridge July 15, 2025. Select photographs taken during the site visit are attached as Exhibit C. A full list of the documents relied upon in preparing this Report can be found in Exhibit D.

18. RLBA may revise and supplement the opinions herein upon further review and analysis of any new data, materials, expert reports and testimony.

19. RLBA understands its duty as experts are to provide a fair and objective opinion and RLBA declares its independence in relation to all parties in this dispute. In addition to Mr. Marianos and Mr. Cunningham, other RLBA colleagues have assisted with the preparation of parts of this Report but the opinions expressed herein are those of Mr. Marianos and Mr. Cunningham.

III. Executive Summary

20. RLBA found that the damages alleged by the Belt Line did not account for the depreciated state of the bridge that was struck and, as such, overstated the damages amounts. In addition, RLBA found no credit for scrap steel that was not used in the project and inappropriate labor charges. Based on RLBA's

[2] NPBL008176

professional experience, knowledge, training, skill and education and after a thorough review and analysis of the facts and materials provided, it is RLBA's opinion to a reasonably professional economic and engineering certainty that Table 1 provides a summary of RLBA's findings on the matters we have been asked to opine on in this matter.

Table 1 – Summary of RLBA Damages Reductions Applied to ***Belt Line's Claim***

Category	Subtotals	Depreciated Value	Totals
Total Damages Claimed by Belt Line			$ 15,542,872
Ties and Rail	$ 224,446		
PCL Classified Damages	$ 5,780,290		
PCL Unclassified Damages	$ 7,524,646		
Construction Total Damages	$ 13,529,383		
Depreciated Value		$ 2,343,949	
Depreciation Reduction			$ (11,185,434)
H&H Classified Damages	$ 262,471		
H&H Unclassfied Damages	$ 252,178		
H&H Total Damages	$ 514,649		
Depreciated Value		$ 88,166	
Depreciation Reduction			$ (426,483)
Total Depreciation of Belt Line's Claim			$ (11,611,917)
Total Damages less Depreciation			**$ 3,930,954**
Scrap Steel Credit			$ (41,897)
Belt Line Labor Damages	$ 1,087,141		
Labor Charges removed	$ 916,291		
Labor Reduction			$ (916,291)
TOTAL Damages			**$ 2,972,767**

IV. Railroad Bridges, Types and Components

a. MLRB Description and History

21. The Belt Line Elizabeth River bridge crosses the southern branch of the Elizabeth River in Norfolk Harbor, Virginia. The bridge runs approximately east to west. Starting at the west end, the bridge includes three deck plate girder spans, a truss span (Span 4) which also supports the west tower, the truss lift span (Span 5), an east truss span (Span 6) which also supports the east tower, and a deck plate girder span. Span 4 was struck during the allision.

22. The bridge was constructed around 1958, replacing an earlier bridge at the site. Many of the plan sheets, however, are dated 1949, indicating a significant delay between design and construction.[3] It is not clear from the records provided why this delay occurred.[4]

b. Components of a Vertical Lift Truss Bridge

23. A vertical lift truss bridge includes several categories of components. These are: 1) the mechanical and electrical systems; 2) the truss floor system and 3) the main truss members.

24. The mechanical components include the machinery required to raise and lower the movable span. The lift span is balanced with counterweights in each tower. On the MLRB, the motors that lift the structure are located on the movable span. The electrical components control the mechanical equipment and monitor the position and movement of the lift span.

25. The truss floor system includes the steel members that directly support the ties and rail. The MLRB is an open-deck structure, in which the ties sit directly on steel stringers which run parallel to the track. The ends of the stringers are supported by floorbeams, which transfer the loads from the stringers to the truss main members. The floorbeams run transverse to the centerline of track. The floorbeam connection locations are denoted as panel points and are numbered from one end of the truss to the other. The zone between panel points is identified as a panel. The floor system includes some bracing members between stringers.

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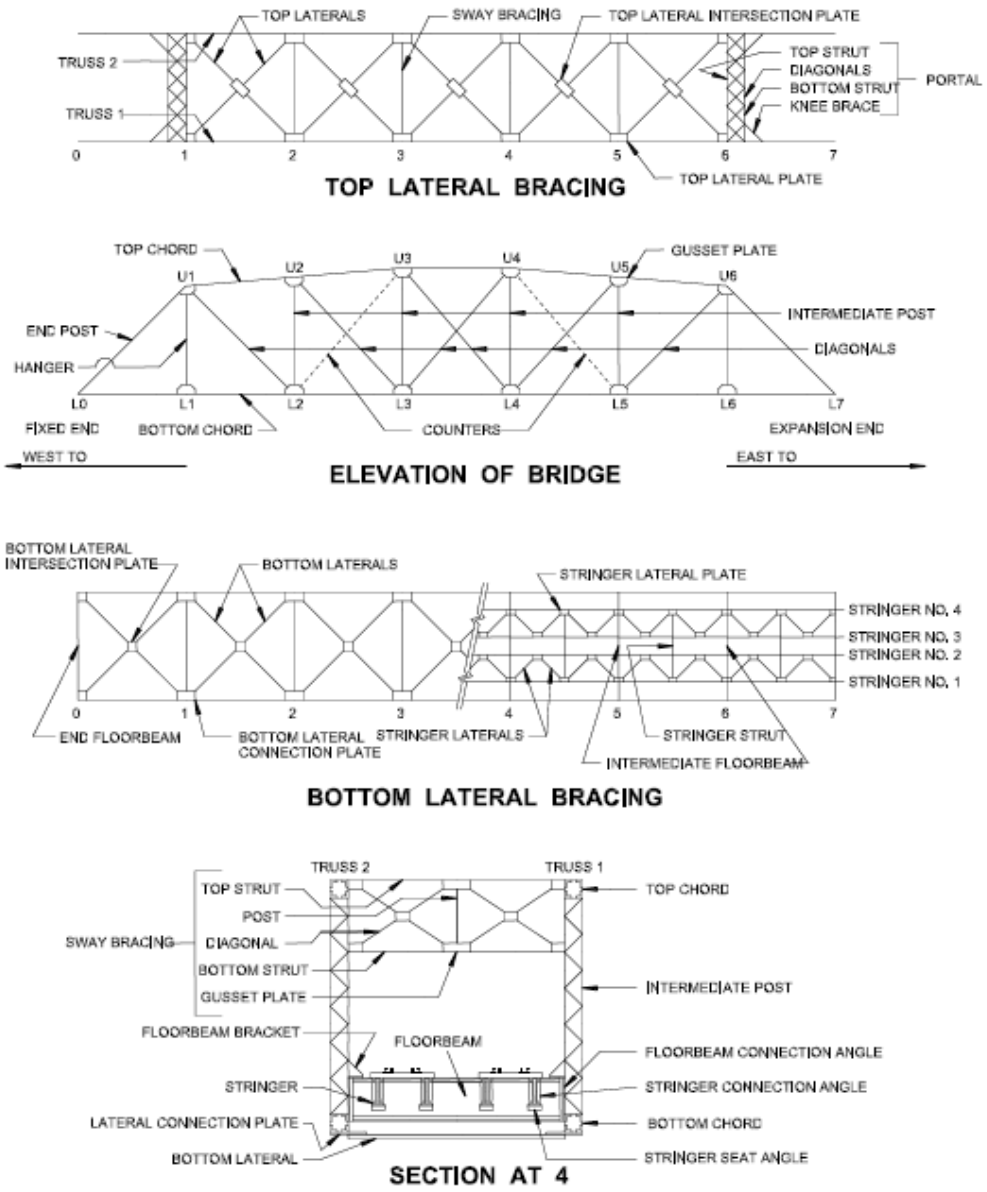
[3] "Bridge Across South Branch of Elizabeth River, Norfolk Harbor, Virginia" drawings prepared by Harrington and Cortelyou, Consulting Engineers

[4] Id.

26. The MLRB spans 4, 5 and 6 are through trusses, in which there are main supporting members both above and below the railroad track. The upper (or top) chords are located above the train height and run parallel to the centerline of track. The lower (or bottom) chords are located below the rail height and also run parallel to the track. Diagonal and vertical members run between the upper and lower chords connecting panel points. The main truss components also include bracing elements. A diagram showing the main components of a typical through truss bridge is shown below.

Diagram 1 – Typical Through Truss Bridge[5]



[5] From American Railway Engineering and Maintenance-of-Way Association *Manual for Railway Engineering*, Chapter 15, Steel Structures.

c. Service Life of Components

27. The various components of any movable bridge experience different load conditions and frequencies of loading. The mechanical system is stressed every time the lift span is raised or lowered. The truss floor system is typically stressed by the loading and unloading associated with every rail car passage. The main span components are typically stressed by every train passage. Each of these types of components experiences a different estimated service life due to the frequency and severity that loading has on each component.

i. Mechanical/Electrical Components

28. Mechanical and Electrical components typically experience a shorter service life than structural components. In a presentation on a vertical lift span rehabilitation in New York, it was stated that the "project was implemented to provide a minimum of 20 years of additional reliable service."[6]

29. Another presentation covered a vertical lift rehabilitation project in the Hampton Roads, Virginia area. It described an investigation and report focusing on "full mechanical, electrical, structural, and architectural rehabilitation with the goal of maximizing operational availability for the next 25 years."[7]

ii. Structural Components

30. As background, the current design of steel railroad bridges is guided by Chapter 15 "Steel Structures" of the American Railway Engineering and Maintenance-of-Way Association *Manual for Railway Engineering*. It should be noted the *Manual* is a recommended practice, not a specification. While Chapter 15 contains many occurrences of "service life" or "life" in its guidelines, it does not state the estimated service life of a steel bridge.

31. A 2019 research paper stated that more than 50% of a common type of steel railroad bridges (deck plate girder spans) are over 100 years old.[8] However, it should be noted that the type of structure studied does not have a floor system like the MLRB features. John Unsworth, former Chief Bridge Engineer, at Canadian Pacific Railroad, is a past chairman of AREMA Committee 15. In the preface

[6] "Successful Rehabilitation of Movable Bridge Through Design Build Process" by Eric Kelly and Warren Howard, presented at HEAVY MOVABLE STRUCTURES, INC. NINETENTH BIENNIAL SYMPOSIUM, October 16-20, 2022
[7] "James River Bridge – Main and Auxiliary Wire Rope Replacement" by Robert Powell and Stephen Grabowski, presented at HEAVY MOVABLE STRUCTURES, INC. TWENTIETH BIENNIAL SYMPOSIUM, October 7-10, 2024
[8] "Can 100-year-old steel railroad bridges continue to be used in service?", by A. Rakoczy and D. Otter, presented at 2019 International Association of Bridge and Structural Engineers symposium

of his 2010 book, he states that 80 years is "[E]stimated as the typical design life of a steel railway superstructure."[9]

32. Another relevant publication is the U.S. Army Corps of Engineers document "NAVIGATION POLICY: COST APPORTIONMENT OF BRIDGE ALTERATIONS" pertaining to bridges replaced under the Truman-Hobbs Act.[10] This program provides federal funding to replace structures determined to be obstructions to navigation, so it is focused on movable bridges. Estimation of service life of a structure to be replaced is part of the apportionment of cost between the government and bridge owner. Section 8.g (2) of this document states: "For railroad bridges service life, figures of 100 years for substructure, 70 years for superstructure, 37 years for treated timber, 35 years for automatic signals, 20 years for main rail, 30 years for siding rail, and 20 years for crossties and bridge ties are considered to be reasonable and will be used in computing the bridge owner's liability."

33. Further, in a presentation on a movable bridge replacement project, it was noted that "[T]he service life of a movable bridge is in the range of 50 to 80 years."[11]

iii. Rails and Ties

34. In the Corps of Engineers document referenced above, the service life of ties and rail is given as 20 years.[12]

iv. Suggested Service Life for Depreciation

35. Based on the documentation referenced above and on RLBA's professional experience, knowledge, training, skill and education and after a thorough review and analysis of the facts and materials provided, it is RLBA's opinion to a reasonably professional economic and engineering certainty that, the following service life estimates are used throughout this Report in depreciation calculations:
    - Ties and Rail - 20 years;
    - Mechanical and Electrical Components - 25 years;
    - Truss Floor System - 70 years and
    - Truss Main Members - 80 years.

[9] *Design of Modern Steel Railway Bridges* (published by CRC press) p. xiii
[10] NAVIGATION POLICY: COST APPORTIONMENT OF BRIDGE ALTERATIONS, ER 1165-2-25 dated 30 May 1979
[11] "Unique Florida Swing Bridge Replacement" by Jeremy Mackling, presented at HEAVY MOVABLE STRUCTURES, INC.ELEVENTH BIENNIAL SYMPOSIUM, November 6-9, 2006
[12] NAVIGATION POLICY: COST APPORTIONMENT OF BRIDGE ALTERATIONS, ER 1165-2-25 dated 30 May 1979

V. RLBA Findings

36. RLBA's most common client seeks RLBA's assistance in valuing railroad assets. There are several ways to do this based on the client's use case. For instance, many clients look to secure a loan from a bank. Banks typically use collateral to secure loans and that collateral is often the physical assets owned by a railroad. Because banks are not in the business of running a railroad, they require that the assets pledged as collateral to obtain any given loan be valued under the assumption of free market conditions such that were the banks' clients unable to pay their loans, the banks could seize the railroad assets pledged as collateral, remove them from the premises and sell them as used parts. This type of valuation is called a Net Liquidation Valuation methodology. A qualified railroad engineer inspects the parts to be sold and determines to what extent they can or cannot be re-used so support railroad purposes or sold as scrap. From that initial subtotal value, costs associated with physically removing the items, marketing them for sale and transporting them to the buyer are all removed (this is the "net" in Net Liquidation Valuation), resulting in an expected value to the seller.

37. Other RLBA clients are looking to sell their railroad operations to a bidder and, therefore, are looking to value the railroad operation itself. This involves an Enterprise Valuation or Going Concern Valuation ("GCV"). A GCV involves looking at past and projected railroad financial statements, often verified through freight rail customer interviews as well as public and proprietary databases of past and future revenues and expenses of similar railroad operations across the United States. Projected values are then converted to a value in today's dollars using a discounted cash flow analysis to arrive at a current operational value.

38. Finally, a third valuation methodology employed regularly by RLBA in response to the needs of its customers is called Replacement Cost New, Less Depreciation ("RCNLD"). This methodology is meant to determine the value of a rail asset or rail assets in their current conditions. While railroad assets change hands from time to time, there is not a fluid market of transactions, nor are the amounts of most of those transactions publicly available. This valuation method offers an alternative way to estimate the value of a railroad asset.

39. A typical RCNLD valuation would be conducted by inspecting all relevant asset components, attributing depreciation at the individual component level and arriving at a total depreciation level of the assets as of a given date. Then, based on current, new component prices, an estimated cost to construct the components necessary to reproduce the subject asset is calculated, which cost is reduced by the depreciation of the existing asset in its current condition.

40. This methodology must be modified to be utilized under the current circumstances. RLBA did not have the benefit of performing an inspection and depreciation assessment of the MLRB prior to the allision. Therefore, an estimated useful life must be derived from standard railroad industry practices along with documentation provided by the Belt Line on the condition of the MLRB prior to the allision.

41. As discussed in the previous section, the useful life of a bridge is based on the condition of its component parts. Useful life is typically assessed by railroads at a macro-asset level as it is unrealistic for every component of every asset to be assessed on a continual basis. A component level assessment also could cause confusing fluctuations in a company's financial metrics as a component may wear more than normal in one year and less than normal in another causing unnecessary "noise" on the financial performance of any company. Looking at the overall trend in depreciation, there is generally, an average annual reduction in life expectancy over time that results in the same or similar reduction as would result from a very expensive annual, component by component, assessment. Using an average reduction in useful life on an annual basis is a common accounting concept called Straight Line Deprecation and is common practice in operating companies including railroads.

42. This uniform or straight-line depreciation is illustrated by submissions to the United States Surface Transportation Board ("STB"), the economic regulator of the railroad industry. The largest railroads, of which there are currently six at the time of writing, submit economic information to the STB and several examples of their annual depreciation percentage submittals have been included in Exhibit E. Depreciation rates are by category, the most applicable to this case is titled "Bridges, Trestles and Culverts" and ranges from 1.07 to 1.43 per annum in the examples provided, depending on the railroad submitting same. This translates to a useful life of between 69.93 years to 93.5 years.[13]

43. However, because the MLRB was not being replaced completely but only having certain components repaired, a component-by-component assessment of the bridge offered a more accurate value than treating the bridge as a single depreciated asset where provided information received by RLBA allowed. Where the documentation provided in the case allowed for a more granular analysis, RLBA broke the assets constituting the MLRB into the four groups mentioned at the end of Section IV. Those groups again are:

- Ties and Rail;
- Mechanical and Electrical Components;
- Truss Floor System and

[13] Exhibit E, RLBA Analysis - 1/.0107=69.93, 1/.0143=93.5

- Truss Main Members.

44. Much of the provided documentation was not at a granular enough level to distinguish and categorize the materials and labor. For example, PLC invoices included bulk labor categories that did not break down into the groups mentioned above. In those cases, RLBA applied the depreciation associated with the Truss Main Member group as it has the longest useful life and, therefore, was the most conservative assumption made.

45. The documentation provided in connection with the two, primary companies performing the work, H&H and PCL, is not granular enough to distinguish in many cases. The new steel purchased and modified is cataloged in the invoices but the labor to accomplish that work is not distinguishable from the labor that was used for other purposes. As such, RLBA categorized damages as "classified" or "unclassified" depending on ability to distinguish and classify from the provided information. Classified damages were grouped and unclassified damages were all assessed depreciation based on the longest useful life determined, that of the Truss Main Members, in the event that it is determined that certain amounts are not depreciable.

a. PCL Invoice Amount

46. As regards PCL invoices, RLBA accomplished this estimation by reviewing the invoices provided along with the narrative descriptions of the work done throughout the project. These narratives were communicated in email updates and notes from weekly meetings among contractors during the during the repair process.[14] The narratives and invoices roughly between the allision on June 15, 2024 and midway through October 2024 are not at a level of granularity and specificity to determine classification. As such, the Truss Main Member depreciation rate was applied across all expenditures.

47. Between the halfway point of October 2024 and the end of January 2025, the majority of work done appears to be work on new bridge components and shown at a level with which they can be classified. As such, RLBA split the October 2024 invoice in half with anything between October 15, 2024 and January 31, 2025 being classified. A summary of the invoice amounts PCL charged is shown on the following page in Table 2.

[14] Lugo Report, Exhibit 10

Table 2 – PCL Invoices between October 15, 2024 and January 31, 2025[15]

Date	Total Invoice Amount	Classified Cost Total
June, 2024	$300,997.62	
July, 2024	$1,150,040.45	
August, 2024	$1,200,865.67	
September, 2024	$1,184,763.10	
October, 2024	$4,581,044.35	$2,290,522.18
November, 2024	$783,075.66	$783,075.66
December, 2024	$1,074,252.56	$1,074,252.56
January, 2025	$1,632,440.06	$1,632,440.06
February, 2025	$719,259.08	
March, 2025	$480,846.87	
April, 2025	$345,137.06	
May, 2025	$76,661.00	
TOTAL	**$13,529,383.48**	**$5,780,290.46**

48. Using H&H design sheets, RLBA distributed the cost associated with classified damages into the aforementioned four groups to determine a percentage of material parts per group. Ties and Rail were separately invoiced by subcontractors and, as such, are not listed below as an estimate is not needed. The results of said distribution are summarized below[16]:

- Mechanical and Electrical – 8.1% of total steel charged to the project
- Truss Floor System – 36.33% of total steel charged to the project
- Truss Main Members – 55.57% of total steel charged to the project.

49. The percentage of total materials in each group was then applied to the classified damages total between October 15, 2024 and January 31, 2025 to arrive at a classified damages total per group of:

[15] NPBL008176, RLBA Analysis
[16] RLBA Analysis and estimation of H&H Design Sheets, shown in Exhibit F

- Ties and Rail - $224,446; [17]
- Mechanical and Electrical Components - $468,030;
- Truss Floor System - $2,100,013 and
- Truss Main Members - $3,212,248. [18]

50. The MLRB was constructed at some point between 1950 and 1958 and, as far as RLBA can tell from the documentation provided, has not undergone any additions, replacements or changes to the Truss Main Members.[19] Because the exact date that railroad operations commenced over the bridge does not appear to be known, RLBA conservatively assumed 1958 as the start date. As such, conservatively assuming a construction date of 1958 and an estimated useful life of 80 years, the Truss Main Members had approximately 17% of their useful life remaining on the day of the allision.[20]

51. Similarly, RLBA found no indication or testimony that the Truss Floor System has undergone major work to date. Assuming an estimated useful life of 70 years and original construction in 1958, the Truss Floor System had approximately 5% of its useful life remaining on the day of the allision.[21]

52. The Mechanical and Electrical Components appear to have undergone some work in 2018 based on the repair documentation provided in this matter.[22] It's unclear whether this was an extensive replacement from the invoices and, based on the 2019 mechanical inspection of the MLRB that noted over 30 issues and recommendations, it likely was not.[23] That said, if RLBA conservatively assumes that the Mechanical and Electrical Components were completely rehabbed/replaced in 2018 and would have enjoyed a useful life of 25 years but for the allision, they would have approximately 74% of their useful life remaining on the day of the allision.[24]

53. Ties and Rail have an estimated useful life of 20 years.[25] RLBA found no maintenance records indicating when/if the last tie/rail replacement occurred. However, an email from Cannon Moss, Belt Line General Manager, to the Belt Line's Board of Directors stated that redecking and re-railing was

[17] NPBL008176, Invoices from Cliffs Rail, Stella Jones and Burnet & Sons, Inc.
[18] Damages of the three groups other than Ties and Rail were derived by multiplying the total amount in Table 2 by the percentages in Paragraph 48
[19] NPBL003543
[20] 1958+80 = 2038, 2038-2024.5= 13.5, 13.5/80 = .1688
[21] 1958+70 = 2028, 2028-2024.5 = 3.5, 3.5/70 = .05
[22] NPBL000999-1305
[23] NPBL001634-1728
[24] 2018+25 = 2043, 2043-2024.5 = 18.5, 18.5/25 = .74
[25] NAVIGATION POLICY: COST APPORTIONMENT OF BRIDGE ALTERATIONS, ER 1165-2-25 dated 30 May 1979

scheduled to occur in 2027.[26] Assuming the replacement was due to the end of the tie and rails useful life, the ties and rail had approximately 13% of their useful life remaining on the day of the allision.[27]

54. As described previously, the remaining invoices were unclassified and a depreciation level commensurate with the Truss Main Members was applied.

55. Based on RLBA's professional experience, knowledge, training, skill and education and after a thorough review and analysis of the facts and materials provided it is RLBA's opinion to a reasonably professional economic and engineering certainty that the depreciation percentages applied to the damages by group results in Table 3, shown below.

Table 3 – Depreciated Total of Damages, Construction Invoices[28]

Group	Damages Amount	% of Useful Life Remaining	Depreciated Total
Ties and Rail	$224,446	13%	$29,178
Mechanical/Electrical Components	$468,030	74%	$346,342
Truss Floor System	$2,100,013	5%	$105,001
Truss Main Members	$3,212,248	17%	$546,082
Classified Sub-total	*$5,780,291*		*$997,425*
Unclassified	$7,524,646	17%	$1,279,190
TOTALS	**$13,529,383**		**$2,305,793**

b. H&H Invoices

56. As discussed in the previous section, H&H invoices presented the same issue as those submitted by PCL. Work was conducted but there is no clear way to distinguish clearly the total amounts attributable and, as such, RLBA, where it could, estimated what portion of total billing was attributable to classification groups.

[26] NPBL002687, PDF pg. 44
[27] 2027-2024.5 = 2.5, 2.5/20 = .125
[28] As discussed in paragraphs 51-55 of this report

57. In the case of H&H invoices, RLBA reviewed the conformed set of drawings and split the costs by the proportion of sheets in the conformed drawing set associated with unclassified work versus those associated with classified work.[29]

58. RLBA found a total of 54 sheets, of which 25 were unclassified and 26 were classified. Three sheets were related to a motor brake, an item that in deposition testimony Belt Line official, Mr. Cannon Moss, stated was not part of the project.[30] Howard Swanson also confirmed that this work was unrelated to the allision. H&H charged a total of $544,922.37 or $10,091.16 per sheet.[31] Removing the three pages related to the motor brake results in a total damages amount of $514,648.89.[32] Of that amount, 49% of H&H billing RLBA associated with unclassified work while 51% (26 out of 51 sheets) was associated with classified work.[33]

59. The 51% of H&H's billing that was able to be classified resulted in a total of $262,470.93. Again, RLBA utilized the same percentages applied to the PCL invoices in three of the four groups of components the bridge is classified into (Rail and Ties are not included because they were billed separately and estimation is not needed), resulting in the following percentages:

- Mechanical and Electrical Components – 8.1% of total steel charged to the project;
- Truss Floor System - 36.33% of total steel charged to the project and
- Truss Main Members – 55.57% of total steel charged to the project.

60. Applying those percentages to H&H's billing results in the following:
- Mechanical and Electrical Components - $21,260.15; [34]
- Truss Floor System - $95,355.69 and
- Truss Main Members - $145,855.10.

61. As described previously, the remaining invoices were unclassified and a depreciation level commensurate with the Truss Main Members was applied.

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[29] 2024.11.19 NPBL Conformed Set (by dwg no).pdf (no bates labels on the copy provided to RLBA)
[30] Cannon Moss Deposition, pgs. 172-173
[31] NPBL008176, $544,922.37/54 = 10,091.155
[32] $544,922.37-(3x10,091.16)= $514,648.89
[33] 25/51 = .49, 26/51 = .51
[34] $262,470.93 x .081

62. Based on RLBA's professional experience, knowledge, training, skill and education and after a thorough review and analysis of the facts and materials provided, it is RLBA's opinion to a reasonably professional economic and engineering certainty that using the H&H billing figures allocated to the bridge components shown in the previous paragraph and applying the depreciation rates to them, results in the depreciated damages numbers shown in Table 4 below.

Table 4 – Depreciated Total of Damages Derived from H&H Invoices

Group	Damages Amount	% of Useful Life Remaining	Depreciated Total
Mechanical/Electrical	$21,260	74%	$15,733
Truss Floor System	$95,356	5%	$4,768
Truss Main Members	$145,855	17%	$24,795
Unclassified	$252,178	17%	$42,870
TOTALS	**$514,649**		**$88,166**

c. Scrap Steel Credit

63. RLBA noted that 264,335 pounds of steel were used in this project based on the invoices of Infra-metals, the company that appears to have supplied all or the vast majority of the steel on this project. A summary of the Infra-metals invoices can be found in Exhibit F.

64. Based on H&H design sheets, a total of 103,158 pounds of steel were used to replace bridge parts that were damaged. The difference between this amount and the total amount of steel purchased likely has to do with the temporary work that was done to re-align the bridge and spoilage. Steel typically comes in set sizes and often needs to be cut to the desired sizes. The material left over after cuts would be spoilage.

65. RLBA assumes, for the purposes of calculating a scrap steel value, that the damaged steel being replaced had the same/similar scrap value to that of the replacement steel installed. This was a conservative assumption considering that scrap value is the lowest value that used steel could realized in the marketplace. The Infra-metals invoices then fall into three broad categories; 1) temporary work that was removed at the end of the project, 2) replacement steel that is likely the same or similar weight

to that which it replaced and 3) scrap steel wasted from the cutting process to create the replacement parts.

66. As such, the total amount of steel leftover after the bridge was repaired should equal the amount shown in Infra-metals invoices, 264,335 pounds. Some of that steel was likely scrap while some of it may have been useable for other purposes. The lowest price the steel could garner would be the scrap steel price.

67. Based on RLBA's professional experience, knowledge, training, skill and education and after a thorough review and analysis of the facts and materials provided, it is RLBA's opinion to a reasonably professional economic and engineering certainty that no credit was attributed to scrap steel in the invoices provided. Current scrap prices are $317/ton and have decreased substantially since the Spring of 2025.[35] Once again, to be conservative, RLBA utilized the current price of scrap ($317) to arrive at a total credit of $41,897 that should have been in calculating net damages.[36]

d. Belt Line Labor

68. In addition to the MLRB repair and replacement work, Belt Line T&E, Yardmaster and MoW employee time was reflected in Belt Line's damages calculation with little detail or explanation provided. To address those charges, RLBA created a summary chart, which will be addressed in general, followed by analysis and questions concerning specific line items. Data in the chart was derived from NPBL008176.

Table 5 – Summary of NPBL Employee Damages

Category	Costs	Additive Rate	Total	Reason
Access Road	$7,918.12	272.34%	$29,482.33	An access road was built to allow repair contractors to access site, stage equipment and materials. Road was constructed with NPBL personnel, Photos attached
	$10,444.69	5.00%	$10,966.92	Ballast, accounted for on NPBL road tab
	$20,260.94	5.00%	$21,273.99	
T&E employees	$128,121.81	185.01%	$365,159.97	Additional crew time used for all diversion trains and additional moves related to
Yardmasters	$191,259.85	185.01%	$545,109.70	
MoW Employees	$317.60	272.34%	$1,182.55	Maintenance of Way additional crew time associated with MLB incident minus

[35] The price of #1 Heavy Melting Scrap on scrapmonster.com is $317 as of this writing but was as high as $365 in April 2025
[36] 264,335 lb / 2,000 = 132.17 tons, 132 tons x $317 = $41,897.10

69. Speaking broadly about Table 5, the first item to note is the third column showing Additive Rates. The Belt Line has added a 5% "additive rate" that appears to be nothing more than a markup of materials it purchased from Vulcan materials. In the context of a damages claim, this is not appropriate as this is not a revenue-driven project of the Belt Line but, rather, a damages claim designed to make the Belt Line "whole" as regards costs it incurred associated with the allision, not profit, less any benefits or improvements it may have received as part of the repair process. Damages claims are meant to reimburse a harmed party for costs it incurred, not to generate revenue by marking up materials.

70. Similarly, additive rates have been applied to Belt Line employees' time. Regardless of whether these rates may have been approved by a Federal or State government entity, they are not appropriate in the context of a damages claim. The majority, if not all, of an additive rate is fixed costs like insurance, building leases or ownership costs, benefits, etc. Those are costs incurred by the Belt Line whether the bridge allision occurred or not and are not appropriate in the context of a damages claim. Finally, the Belt Line is a relatively small and administratively lean operation but is using Norfolk Southern Railway's additive rates. Norfolk Southern was recently valued at $85 billion and likely has floors of accountants and legal staff amongst other employees that are reflected significantly in its additive rate.[37] Even if some of the additive rates are not fixed, using NS rates likely inflates the charges the Belt Line, with its much smaller and less costly administrative, fixed-cost staff, is alleging.

71. Moving to individual line items, Train and Engine Employees charges amount to damages of $128,121.81 before the additive. Two separate tabs in the NPBL008176 labeled spreadsheet show details of those charges. One, labeled "Train and Engine pay" shows a daily breakdown by day and employee of Train and Engine employee crew costs. The dates range between 6/22/24 and 2/28/25. The second tab is labeled "Crews used for MLB incident" and is a more concise representation of each day where a railroad crew was called with the names of the employees and the amount of time they were on duty.

72. RLBA understands from the deposition of Adam Reeder that, prior to the allision, all trains traversing the MLRB were CSX trains that either operated across the bridge from west to east and put their train in the Belt Line's rail yard where it would sit until a Belt Line crew could take it to its destination or a CSX crew would come to the Belt Line's yard and put a train together to depart westbound across the MLRB bridge.[38] Absent the MLRB, CSX interchanged its trains to NS in Petersburg, VA and NS

[37] https://www.joc.com/article/up-looks-to-create-first-coast-to-coast-railroad-with-85-billion-ns-deal-6052288
[38] Steven A. Reeder Deposition pgs. 29-32

brought them to its Portlock Yard on the east side of the Elizabeth River where a Belt Line crew had to operate the train from Portlock Yard to its Belt Line yard. Trains needed to be moved in a more timely manner because Portlock Yard did not have an operating plan and/or capacity to accommodate CSX trains and it would quickly become congested were those CSX trains not moved in a timely manner.

73. It is typical in the railroad industry that a unionized rail crew called on duty is paid as if it worked eight hours regardless of whether it worked eight hours or just four. RLBA presumes that this is the case with Belt Line labor but has not seen nor does it enjoy access to the Belt Line collective bargaining agreements. That said, the "Crews used for MLB incident" tab shows a time on duty tab that in some instances records as little as two hours and twenty-one minutes on duty. What RLBA cannot discern from the records is, was that crew released after two hours and twenty-one minutes on duty or did it perform other work not related to moving CSX trains between the NS yard and the Belt Line yard. Similarly, some crews were on duty as long as twelve hours and forty minutes. Did these crews do nothing but move one or more train(s) between NS and Belt Line yards? These yards are less than two miles apart from each other via the connecting rail lines which makes a twelve plus hour on duty time difficult to understand, even to former railroad operations employees who understand the slow pace and roadblocks that can be encountered during a short move by a yard crew. If these crews performed other duties, it would be inappropriate to allocate all of their time as damages and, based on the "Train and Engine pay" tab, that is exactly what was done.

74. RLBA also took note of additional charges the Belt Line crews included in its damages estimate. Unionized rail crews often receive additional money when they are asked to perform or refrain from performing certain activities outside those specifically recognized in the governing, collective bargaining agreement as constituting a "standard day." For instance, if a crew is not instructed to take a meal break for lunch/dinner within a proscribed number of minutes after it has reported in duty, it receives an additional amount of money railroad managements characterize as "arbitraries." RLBA found over three hundred such charges in the "Train and Engine pay" tab totaling $4,774.43 for "No 1st meal," "No Second Meal," "Reduced Crew," "student engineer" and "Vacation" time charges. The reduced crew charges almost all occurred on days that appear to be crewed by three men (typically considered a full-crew in today's railroading environment). The other charges, in RLBA's opinion, are management decisions that should not be included in damages claims.

75. Moving to Yardmaster Pay, the same date range of 6/22/24 to 2/28/25 is listed in a separate tab within NPBL008176. There is no explanation in the Summary of Expenses tab, nor is there any testimony

as to why yardmaster time would be appropriate to include as a damages claim. Typically, a yardmaster serves as a union employee who acts as a first line supervisor of railroad yard crews. They're in charge of coordinating train movements in a yard and its surrounding area. Perhaps some of a yardmaster's time would be spent coordinating with NS and CSX under the temporary arrangement to move trains around the disabled MLRB but absent some explanation it's hard to understand how the entire burden of a yardmasters full wages could be justifiably claimed as damages due to the allision. In addition, and similar to the Train and Engine employees charges, ancillary charges in connection with vacation and off-assignment are included as are overtime charges. Absent some explanation, RBLA finds yardmaster wages as outside the scope of damages.

76. Lastly, a tab showing "MOW Bridge Op pay" shows Belt Line employee charges in connection with track maintenance activities but there is no explanation in the spreadsheet of what type or kind of work was performed that would justify its appropriate inclusion as damages. The only reference RLBA found to explain the costs associated with Belt Line MoW employees' time was from Mr. Lugo's report which stated, "*Maintenance of Way Employees were responsible for operating the Main Line Bridge lift manually and railroad flagging operations, including during the repair operations.*"[39] Similar to what was found in other Belt Line labor categories, there are questionable entries like two employees charging three and four hours, respectively on January 1, 2025 at a double time rate. It is possible that this was necessary work but it seems odd given the other labor tabs do not record work that day (i.e. – no trains operated across the bridge that day).

77. In summation, based on RLBA's professional experience, knowledge, training, skill and education and after a thorough review and analysis of the facts and materials provided, it is RLBA's opinion to a reasonably professional economic and railroad operations certainty that RLBA has created in Table 6, shown on the following page, a modified damages calculation in connection with Belt Line Labor that has removed additive rates and yardmaster pay and reduced Train and Engine pay by $4,774.43 as explained above.

[39] Lugo Report pg. 21

Table 6 – Adjusted Belt Line Labor Claims

Category	Amount
Total Belt Line Labor Damages Claimed	$1,087,140.72
Removal of Additive Rates	-$720,256.49
Removal of Discretionary Charges	-$4,774.43
Removal of Yardmaster Damages	-$191,259.85
TOTAL Belt Line Labor Damages	**$170,849.95**

e. Damages Summary

78. Summing up the prior four sub-sections, RLBA found damage reductions related to the depreciated state of the MLRB prior to the allision and inappropriate charges of additive and ancillary costs that should not be included in a damages claim. Table 7, shown on the following page, summarizes the total reduction to or downward adjustment to damages claims that RLBA believes is appropriate. Based on RLBA's professional experience, knowledge, training, skill and education and after a thorough review and analysis of the facts and materials provided, it is RLBA's opinion to a reasonably professional economic and engineering certainty that total damages after applying depreciation and removing inappropriate charges are $2,972,767.

Table 7 – Total Damages Adjustments

Category	Subtotals	Depreciated Value	Totals
Total Damages Claimed by Belt Line			$ 15,542,872
Ties and Rail	$ 224,446		
PCL Classified Damages	$ 5,780,290		
PCL Unclassified Damages	$ 7,524,646		
Construction Total Damages	$ 13,529,383		
Depreciated Value		$ 2,343,949	
Depreciation Reduction			$ (11,185,434)
H&H Classified Damages	$ 262,471		
H&H Unclassfied Damages	$ 252,178		
H&H Total Damages	$ 514,649		
Depreciated Value		$ 88,166	
Depreciation Reduction			$ (426,483)
Total Depreciation of Belt Line's Claim			$ (11,611,917)
Total Damages less Depreciation			**$ 3,930,954**
Scrap Steel Credit			$ (41,897)
Belt Line Labor Damages	$ 1,087,141		
Labor Charges removed	$ 916,291		
Labor Reduction			$ (916,291)
TOTAL Damages			**$ 2,972,767**

VI. Findings of Opposing Experts

79. This section discusses some of the findings discussed in the Reports of Mr. Kevin Lugo, Mr. Lee Lentz and YA Engineering Services. RLBA disagrees with some of the opinions expressed in these reports and utilizes this section to discuss those areas where there is disagreement to explain and support RLBA's opinions. Objective consideration of some of the issues discussed below could result in making further reductions in the damages calculations but RLBA did not reflect anything discussed in this section in its final calculations of appropriate damages due to either lack of documentation and/or uncertainty in the amount by which the issue would reduce damages claims.

80. In his Report, Mr. Lentz discusses the adequacy of the MLRB prior to the allision.[40] In that section, Mr. Lentz references the fact that the Belt Line maintains a Bridge Management plan, which is a Federal requirement and that it's inspected annually by professional bridge engineers as evidence that the MLRB is being properly maintained. Annual bridge inspection is a common practice on railroads despite FRA regulations requiring inspection less frequently, only every 540 days. Further, Mr. Lentz references the 2019 Mechanical and Electrical inspection as evidence of proper maintenance. While it is true that there were no required, emergency repairs listed in the 2019 report, there was a list of over 30 repair items, some of which may not have been completed prior to the allision.

81. Mr. Lentz goes on to comment on the reasonableness of the repair methodology. Specifically, he states that, "The emergency structural repairs were specified to replace components in kind while meeting current design practice and material availability." RLBA finds this to be a misleading statement. While it is likely true that material availability and current design practice was utilized, the steel used in the replacement parts is not an in-kind replacement. The MLRB was original constructed using a grade of steel called "A7." According to a National Cooperative Highway Research Program ("NCHRP") report, A7 steel was the most common type of structure steel prior to the 1950s.[41] The replacement parts used on the MLRB used a grade of steel called A709 Gr. 50.

82. The same NCHRP report goes on to state that ASTM-A572, a grade of steel that is comparable to A709 Gr. 50 is twice as resistant to corrosion as grade A36 steel, a grade that is similar to that of A7 steel.[42] This is particularly relevant given the fact that MLRB crosses a large body of brackish water and is exposed to a high degree of corrosive elements. Note that the use of a less corrosive steel was not taken into account in the depreciation discussions of this report but likely would have the effect of constituting a betterment to the bridge as components of this material will likely last longer than a true, in kind replacement would have, which improvement the Belt Lone seeks to fund through the backdoor of its damages claim.

83. Mr. Lentz goes on to discuss the reasonableness of the costs associated with the repair.[43] RLBA notes that this analysis is not done in the context of a damages claim but of an engineering project. Absent any citations or any calculations other than his experience of a typical engineering fee percentage, Mr.

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[40] Lentz Report, pgs. 2-3
[41] *National Cooperative Highway Research Program (NCHRP) Report 333, "Guidelines for Evaluating Corrosion Effects in Existing Steel Bridges" (1990),* pg. 6
[42] Id
[43] Lentz Report, pgs. 3-4

Lentz opines that a typical project like this would cost, "in excess of $17M."[44] He does go on, in the same paragraph, to discuss the original cost estimate was $12M, which increased to $15M due to the speed at which the construction was completed. However, records indicate that the Belt Line requested a faster project completion to have the bridge in service by the commencement of its "busy season."[45] This involved increased expenses due to labor working overtime and double time as well as a second shift which can be more costly and less productive in RLBA's experience. These additional costs were incurred to complete the bridge repairs by October 1, 2024[46] perhaps in the expectation that such costs could be passed on easily to another party.

84. Based on the estimates from Mr. Moss to the Belt Line Board of Directors, this expedited timeline to complete repairs by October 1, 2024 increased the budget from $12M to $13.7M.[47] Ultimately the costs increased to approximately $15M due to the fact that expedited repair work was authorized but did not meet its target budget, resulting in additional costs incurred by Belt Line Train and Engine crews, Yardmasters and Maintenance of Way employees through the end of February 2025.

85. Another delay to the expedited timeline was the lack of fabrication drawings provided to H&H and PCL. These drawings are used in the steel fabrication shop to provide detailed layout and identification of component lengths and hole locations. Mr. Howard Swanson, an employee of H&H, stated in his deposition that H&H was, "*....handicapped on this project in that we did not have the original steel fabrication drawings for this bridge."*[48] While Mr. Swanson testified that the lack of fabrication drawings caused, "*a little bit more work on our end and a little bit more communications to make sure that like bolt spacing was the same location where – that were indicated in the original design drawings,*" RLBA notes that there are several RFI's that address incorrect bolt hole locations that had to be remedied with extra time and expense to be fixed.[49]

86. While more detailed than the Lentz Report, Mr. Kevin Lugo's Report is appropriately subject to the same criticisms. It displays a breakdown of costs and a pro forma review of rates charged versus rates in the contract but little to no analysis on the actual construction process or the issues mentioned above. Mr. Lugo does cite one repair that was referenced in the 2024 Bridge Inspection done just prior to the allision, on June 4-5, 2024.[50] He claims the cost to repair that item, which was done and included as

[44] Id., pg. 4
[45] NPBL002695-2698
[46] Id
[47] NPBL002695-2698
[48] Swanson Deposition, pg. 91
[49] RFI 13, RFI 8, RFI 006 pkg 4 and pkg 7.2
[50] Lugo Report, pg. 18

part of the damages claim, would only cost about $300. RLBA notes that this cost includes no labor markup and is a highly suspect estimate based on RLBA's experience.

87. Mr. Lugo also opines that the cost of bridge rope lubrication was appropriate to include in the damages claim as the bridge was not used for several months, allowing dust and elements to adhere to the ropes.[51] While this is a plausible explanation, RLBA notes that the 2019 Mechanical and Electrical Inspection report noted cleaning and lubrication of the bridge's ropes were needed. It was again noted in the June 2024 pre-allision inspection report that the ropes required lubrication and the lack thereof had caused significant wear and tear on the mechanical system. RLBA has not identified any documentation to indicate that those services were undertaken before the allision or if part of the cost associated with cleaning and lubricating the ropes stemmed from issues noted in 2019 and 2024 (pre-allision) that were not caused by the allision. If they had not been, at least some of the costs Carver was billed for these services should be removed from the damages claim.

88. Finally, the YA Engineering report is the only one that puts forth some idea of the depreciated state of the bridge. However, it provides a value based on the cost to construct two unrelated bridges, one of which was constructed in 2011 and the other of which was the replacement of only a portion of the bridge. An index was used to escalate the value to current dollars and concludes that the overall value of the MLRB minus depreciation is higher than the cost of the repairs. Therefore, YA Engineering concludes that all the charges are appropriate. This approach fails to consider any improvements or betterments the Belt Line received in the process of repairing the MLRB. YA Engineering's approach also fails to review the repair work in favor of looking at the MLRB and other bridges as wholes, missing the betterments added to the MLRB as part of the repair process at a component level. If a party to this case is going to pay any amount to the Belt Line to remedy its actions, the amount of said payment should be reduced to recognize the value of extensions to the life of the subject bridge and its component parts.

VII. Conclusion

89. RLBA was retained to evaluate the appropriate measure of damages and value thereof relating to the allision that occurred on June 15, 2024. As stated above, RLBA utilized RCNLD methodology which is generally accepted to value railroad assets and is consistent with the maritime rule of law. The opinions set forth in this report are stated to a reasonable degree of certainty within RLBA's and its authors fields of expertise. Should additional information become known to RLBA, it reserves its right

[51] Id., pg. 17-18

to supplement this report and the opinions it contains. RLBA further reserves its right to expand upon this report and the opinions contained herein when testifying in deposition and/or trial. Based on RLBA's professional experience, knowledge, training, skill and education and after a thorough review and analysis of the facts and materials provided, it is RLBA's opinion to a reasonably professional economic and engineering certainty that total damages after applying depreciation and removing inappropriate charges are $2,972,767.

W. N. Marianos Jr.

Ward Nicholas Marianos, Jr.

James C Cunningham

James C. Cunningham

Exhibit A – WNM CV

WARD NICHOLAS MARIANOS, JR., Ph.D., P.E., S.E.

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EDUCATION

Tulane University
Bachelor of Science in Civil Engineering, 1981 University of California, Berkeley
Master of Science in Structural Engineering, 1985 Tulane University
Doctor of Philosophy in Civil Engineering, 1992 Dissertation topic: "Fatigue Life of Partially Prestressed Concrete Highway Bridge Girders"

PROFESSIONAL REGISTRATION

Louisiana, California, Missouri, Illinois (P.E., S.E.), Iowa, Wisconsin, Indiana, Texas, Washington, Arkansas, West Virginia, Georgia, Nebraska, Mississippi, Kentucky, Alabama, Oklahoma, Florida, New York, Tennessee, Michigan, Virginia, Ohio, North Carolina, South Carolina, South Dakota, Colorado

PROFESSIONAL AFFILIATIONS

American Railway Engineering and Maintenance of Way Association
Member and Past Secretary, Committee 7 on Timber Structures

EXPERIENCE

Self-employed as a consulting bridge engineer since 2005. Employed by Modjeski and Masters Consulting Engineers, Inc. from 1985 to 2005. Continuously involved in railroad bridge design since 1984.

Academic affiliations include University of Missouri-Rolla, Norwich University, and University of Houston.

Representative Railroad Projects:

Texas Pacifico Rio Grande Bridge, Presidio, Texas. Designed railroad bridge across Rio Grande, utilizing prestressed concrete box girders and steel through-plate girder spans. Also performed field inspection of construction.

Merchants Bridge Replacement, St. Louis, Missouri. Provided quality assurance and constructability review for truss bridge and approaches across Mississippi River.

Bridges and Culverts for Logistics Center, Cleveland, TX. Designed several prestressed concrete box girder bridges and pipe arch culverts for railroad logistics center.

Kyle Railroad Br. 92.9, Republican River, KS. Designed 155' through plate girder span for replacement of collapsed truss.

Capacity Ratings for Railroad Spans (Miscellaneous Railroads). Calculated ratings of over 50 railroad spans in 2014-2015 following AREMA procedures.

BNSF Railway Br. 3.8, Plattsmouth, Nebraska. Provided quality assurance and constructability review for truss bridge and approaches across Missouri River.

Merchants Bridge West Approach, St. Louis, Missouri. Prepared design- build request for qualification (RFQ) and request for proposal (RFP) packages on behalf of bridge owner. Served as owner's representative and facilitator during design-build proposal process.

Union Pacific Railroad, Bay City, Texas. Designed roll-in system for replacement of through truss span with 170' through plate girder span.

Instrumentation of High-Speed Rail Bridge, Rhode Island. Coordinated electronic monitoring of behavior of deck plate girder bridge under high- speed (145 mph) rail traffic. Assisted in preparation of report on impact effects due to high-speed rail traffic.

Pioneer Railcorp, Spoon River Bridge, Illinois. Designed bridge replacement as part of design-build team. Plate girder spans were reused from a different location.

Union Pacific Railroad Br. 18.03 Peoria Subdivision, Illinois. Performed bridge design of skewed steel plate girder spans as part of design-build team.

Denton County Transportation Authority, Denton County, Texas. Performed bridge rating calculations to determine capacity of several existing structures. Designed new prestressed concrete bridges to replace several old timber structures. Designed strengthening modifications for an existing steel truss bridge.

BNSF Ballard Bascule Bridge, Seattle, Washington. Supervised mechanical and structural inspection of this movable span and made repair recommendations. Also participating with academic research project involving on-going electronic monitoring of bridge behavior to detect deterioration.

Prairie State Energy Campus, Illinois. Designed three new steel bridges for a line carrying coal to a new electric power plant. This work included hydraulic analyses to set bridge span lengths.

Ouachita River Bridge, Monroe, Louisiana. Designed repairs to the pivot pier of this 100 year old railroad swing span structure. Work involves replacement of major portions of pier while under rail traffic.

Merchants Bridge Evaluation, St. Louis, Missouri. Project manager for this in-depth evaluation of the condition of this 110-year-old, double- track steel railroad bridge crossing of the Mississippi River. Work included review of inspection reports, supervision of fatigue analysis, conceptual design of replacement structures, preparation of repair plans, and strain gauging of members to determine stresses under test train and actual traffic. Purpose of the evaluation was to estimate the remaining economic life of the bridge.

Merchants Bridge Deck Truss Replacement. Project manager for design of replacement for this two-track set of six 125 foot deck truss spans. Replacement spans are open-deck plate girders. Bridge substructure was constructed under active rail traffic to minimize service disruptions.

Kate Shelley Bridge Rehabilitation, Boone, Iowa. Project manager for the evaluation, inspection, strain gauging, and rehabilitation of this historic railroad bridge. The structure consists of steel plate girder spans on steel towers, with one 300' deck truss span. Focus of work was on strengthening to allow simultaneous train operation on both tracks crossing the structure. Recent work involved further testing to evaluate a proposed increase in train speed on the structure.

Merchants Elevated Viaduct Replacement, St. Louis, Missouri. Project manager and project engineer for design of this 66 span, 3600' railroad structure. Structure consists of steel plate girder spans on reinforced concrete piers, founded on drilled shaft and driven piling.

Railroad Standard Bridge Plans. Project manager and project engineer for developing standard bridge plans for the Union Pacific and Southern Pacific Railroads. These included precast concrete superstructure elements (prestressed and conventionally reinforced) as well as precast concrete and steel substructure elements.

Gateway Western Railroad, Missouri River Bridge, Glasgow, Missouri. Design engineer for emergency repairs

to bridge approaches destroyed by scour in the 1993 flood.

Br. 321.98 Repairs over the Trinity River, Liberty, Texas. Project engineer for design of emergency repairs to railroad bridge piers damaged by scour.

Hannibal Railroad Bridge Substructure, Hannibal, Missouri. Project engineer for design of piers for replacement of several spans of a movable bridge across the Mississippi River.

SPRR Br. Over Cibolo Creek, Schertz, Texas. Project engineer for design of replacement for existing truss spans. Replacement used prestressed concrete box girders. Existing trusses were rolled laterally during removal to speed span replacement.

Additional Design Experience:

Designed railroad bridges using reinforced and prestressed concrete and structural steel. Prepared contract documents (plans, specifications, and bid packages), and checking shop drawings. Conducted investigations of distressed structures, and prepared repair plans for them. Reviewed design plans and calculations prepared by others. Monitored construction during site visits to bridges.

Research and Professional Committee Experience:

Participated in preparation of several engineering documents, including NCHRP Project 12-28(7) on corrosion of steel bridges. Served as secretary of AREA Committee 18, and was chairman of ACI Committee 423 on prestressed concrete. Member and past chairman of the subcommittee responsible for developing Committee 423's State-of-the- Art report on partial prestressing. In 1997, helped develop and present the American Railway Engineering Association Structures Loading Seminar. Co-taught a bridge inspection course for Federal Railroad Administration track inspectors.

RAILROAD RELATED PUBLICATIONS

"Timeout for Tech: Railway Bridges" - Written by Gary T. Fry, , Ph.D., P.E., Vice President, Fry Technical Services, Inc.; and W. N. Marianos, Jr., Ph.D., P.E., Structural Enginee
"Upgrading Existing Steel Railroad Bridges for Heavy Axle Loads," (with K.L. Wammel) *Proceedings of the Second International Railway Symposium and Trade Exhibition*, Istanbul, Turkey, October 15-17, 2008.
"Rehabilitation of the Historic Kate Shelley Bridge;" (with A.C. Kober and J. Jarosz), *Proceedings of the American Railway Engineering and Maintenance of Way Association Annual Conference*, September 2003.
"Railroad Bridges," (with D.F. Sorgenfrei), a chapter in *Bridge Engineering Handbook*, CRC Press, 1999.
"Railroad Use of Precast Concrete Bridge Structures," *Concrete International*, September 1991.
"Bridge Replacement is a Quick-Change," (with K. L. Wammel), *Railway Track and Structures*, November 1989.

Exhibit B – JCC CV

Charlie Cunningham
Senior Director

Mr. Cunningham is a versatile, analytical Logistics and Transportation Manager with a strong background in operations and financial analysis. He has administered multimillion dollar budgets and is an effective negotiator with a record of success obtaining best pricing and generating cost savings. He has supervised employees and contractors, known as an influential leader who creates a vision and provides the necessary tools, guidance, and accountability to compare progress to goal and address challenges. Mr. Cunningham collaborates effectively with cross-functional teams to plan and execute key projects and is accustomed to interfacing with Ports and government agencies.

Relevant Project Experience

- ***Burlington Northern Santa Fe*** **Provided expert witness support and testimony related to a matter between BNSF and a Port that was adjudicated under the arbitration provisions in the agreement between the parties. A review of relevant documentation and an opinion on industry practices regarding standards related to railroad operations were provided in the form of a Reply Expert Report demonstrating that BNSF's operations adhered to industry standards and practices and defended the written report in a deposition and testimony in from of the arbitration panel.**

- ***Nicor Litigation Case*** **Served as subject matter expert in a derailment case between Canadian National Railway (CN) and Nicor, a pipeline company doing work under the track where the derailment occurred. Primary efforts revolved around review and assessment of damages CN billed Nicor and those that would normally be applicable in the rail industry.**

- ***State of Vermont*** **Provided expert witness written testimony in support of the State of Vermont's dissent to the STB filing (FD 36472) regarding CSXT's acquisition of Pan Am System. Analysis involved interviews with Vermont Rail System to understand the issues that may arise if the acquisition took place, operationally and commercially and review of applicable existing agreements and STB filings, using the STB filings to form a rebuttal opinion on the negative effects the acquisition would have on the Vermont Railway System and the State of Vermont.**

- ***Burlington Northern Santa Fe (On-going)*** **Provided expert witness support in the form of a report submitted to a national arbitration panel on behalf of a BNSF Railway that was seeking changes in the operating practices of Canadian National railroad because of the discriminatory results the latter's practices had on the former's commercial business. The report included a history of rail operations and regulatory influences, an analysis of rail operations before and after new practices were established and impacts of the practices on BNSF business.**

- ***Snohomish County, Washington*** **Provided economic analysis of current and reasonably expected future freight rail operations on a twelve-mile section of track owned by the County of Snohomish with freight rights allocated to a third party operator in support of an Adverse Abandonment Filing at the Surface Transportation Board (STB). A review of documentation from the existing freight easement holder was reviewed and three reports were written: 1) a cost to cure report stating the needs to upgrade the line to FRA Class 1 standards; 2) an operating and capital maintenance cost report to quantify the costs associated with keeping the infrastructure in FRA Class 1 standards after operations began, and 3) a rail line viability report that reviewed the cash flows from several volume scenarios, are of which showed the rail line would not be viable from a financial perspective. The three reports were filed with the STB under docket No. 1331.**

- ***South Carolina Department of Transportation (on-going)*** **Providing expert witness support in a legal case involving imminent domain and the remedial actions and damages available to the South Carolina DOT after entering into agreements with a Class I Railroad that involved a roadway under construction encroaching on the railroad right-of-way.**

- ***Confidential Client*** **(on-going) – served as damages expert in a case between a short line railroad and a Class I Railroad over operating and service agreements between the parties that required the Class I to perform services on behalf of the short line. Tasks include valuing the additional incurred expenses the short line expended and explaining them in a formal written report. The report has been defended in a deposition and testimony will be provided in front of a three person arbitration panel in the fall of 2025.**

- ***Energy Transfer Partners*** **Led an RLBA team in providing expert opinion on the North American Rail system's ability to handle a quick, significant spike in crude by rail (CBR) volumes should the Dakota Access Pipeline be shut down due to environmental considerations. Analyses included a review of available rolling stock capable of handling crude oil, current congestion on rail infrastructure and the likely outcome of the pipelines volumes being displaced would have on the rail system and the markets they serve that might be disadvantaged should congestion increase.**

- ***Burlington Northern Santa Fe*** **Led internal discussions and participated in negotiations with Union Pacific and Kansas City Southern to implement service in Lake Charles, LA that BNSF believe it had the right to serve under a UP/SP settlement agreement to those customers whose service options dropped from 2 to 1 (had service from UP and SP pre-merger, only UP post-merger). As BNSF's Joint Facilities Manager along the Gulf Coast, participated in binding mediation before the STB to outline BNSF's position and provided a service plan in the event the STB sided with BNSF. The mediation resulted in confirming BNSF's access.**

- ***City of Oakland, CA*** **Assisted with analysis and expert opinions related to settlement negotiations in State litigation and the various land use and rail operating contracts. Specifically, RLBA was tasked with the review of existing and proposed documents and cover certain subjects including, but not limited to, operating rights, allocation of infrastructure maintenance costs, commercial agreements, rail-related public safety issues, and other matters as requested by the City.**

Mr. Cunningham joined RLBA in 2020 after over a decade with a Class 1 railroad and the third largest Port in the United States. During his time with BNSF Railway, Mr. Cunningham held various roles in Operations with responsibility for both bulk freight and intermodal in the Northern California region. Mr. Cunningham also managed Contracts and Joint Facilities for the Southern and Eastern regions of the BNSF system, negotiating agreements with other Class 1 railroads, Ports and Government entities. After his time at BNSF, Mr. Cunningham moved to the Port Authority of New York and New Jersey where he was in charge of business development for discretionary rail cargo.

Prior Written and Verbal Testimony

Burlington Northern Santa Fe Provided expert witness report and testimony related to a matter between BNSF and a Port that was adjudicated under the arbitration provisions in the agreement between the parties. A review of relevant documentation and an opinion on industry practices regarding standards related to railroad operations were provided in the form of a Reply Expert Report demonstrating that BNSF's operations adhered to industry standards and practices and defended the written report in a deposition and testimony in from of the arbitration panel.

State of Vermont Provided expert witness written testimony in support of the State of Vermont's dissent to the STB filing (FD 36472) regarding CSXT's acquisition of Pan Am System. Analysis involved interviews with Vermont Rail System to understand the issues that may arise if the acquisition took place, operationally and commercially and review of applicable existing agreements and STB filings, using the STB filings to form a rebuttal opinion on the negative effects the acquisition would have on the Vermont Railway System and the State of Vermont.

Burlington Northern Santa Fe (On-going) Provided expert witness support in the form of a report submitted to a national arbitration panel on behalf of a BNSF Railway that was seeking changes in the operating practices of Canadian National railroad because of the discriminatory results the latter's practices had on the former's commercial business. The report included a history of rail operations and regulatory influences, an analysis of rail operations before and after new practices were established and impacts of the practices on BNSF business.

Transtar Rail Provided expert witness written testimony at sat for deposition in a matter between Gary Railway Company (a subsidiary of Transtar Rail) and Canadian National Railway (CN) in a dispute over railroad operating

practices agreed to in a Service Agreement between the parties. Written testimony included operating practices as well as economic damages for train delays, time claims by union employees and safety issues related to CN's practices.

Traveler' Indemnity Company Provided expert witness written testimony and documentation prior to a State of Illinois Court Hearing (Wisconsin Central Ltd. (WCL) V. Michels Corporation (MC) / No. 40200-033 CNRC / Case No. 17L888) related to the derailment of a Canadian National (CN) train near a pipeline construction site that was insured by our client. A review of reasonableness on CN's bills to the client was reviewed and communicated to the client before a settlement was agreed to between the parties.

Snohomish County, Washington Provided economic analysis of current and reasonably expected future freight rail operations on a twelve-mile section of track owned by the County of Snohomish with freight rights allocated to a third party operator in support of an Adverse Abandonment Filing at the Surface Transportation Board (STB). A review of documentation from the existing freight easement holder was reviewed and three reports were written: 1) a cost to cure report stating the needs to upgrade the line to FRA Class 1 standards; 2) an operating and capital maintenance cost report to quantify the costs associated with keeping the infrastructure in FRA Class 1 standards after operations began, and 3) a rail line viability report that reviewed the cash flows from several volume scenarios, are of which showed the rail line would not be viable from a financial perspective. The three reports were filed with the STB under docket No. 1331.

Burlington Northern Santa Fe Led internal discussions and participated in negotiations with Union Pacific and Kansas City Southern to implement service in Lake Charles, LA that BNSF believe it had the right to serve under a UP/SP settlement agreement to those customers whose service options dropped from 2 to 1 (had service from UP and SP pre-merger, only UP post-merger). As BNSF's Joint Facilities Manager along the Gulf Coast, participated in binding mediation before the STB to outline BNSF's position and provided a service plan in the event the STB sided with BNSF. The mediation resulted in confirming BNSF's access.

Energy Transfer Partners Led an RLBA team in providing expert opinion on the North American Rail system's ability to handle a quick, significant spike in crude by rail (CBR) volumes should the Dakota Access Pipeline be shut down due to environmental considerations. Analyses included a review of available rolling stock capable of handling crude oil, current congestion on rail infrastructure and the likely outcome of the pipelines volumes being displaced would have on the rail system and the markets they serve that might be disadvantaged should congestion increase.

Exhibit C – Select Photos of Site Visit

Exhibit D – Documents Relied Upon

- Entire Discovery from Hardesty and Handover
- 2025-07-02 Belt Line's Expert Witness Disclosures
- Evanston Insurance Company's Production of Expert Witness Written Reports
- Expert Report of Nicholas Lewis
- Expert Report and Exhibits of Kevin Lugo
- Expert Report of Lee Lentz
- Expert Report of Robert Furborough
- Bridge Management Program (2023) (NPBL006778 - 6812)
- Deposition of Steven A. Reeder
- Deposition of Howard Swanson
- Deposition of Cannon Moss
- Deposition of Paul Hudgins
- Deposition of William O'Brien
- _Adam Reeder emails with Charles Graning (NPBL007501-7737)
- _Adam Reeder emails with Howard Swanson (NPBL007738-7767)
- _Cannon Moss emails with Charles Graning (NPBL007084-7500)
- _Cannon Moss emails with Howard Swanson (NPBL007768-8031)
- _Text Messages (NPBL007065-7083)
- Emails - Moss to Board
- EVANSTON 003886-004678 - Damage Package
- (2023) South Branch Main Line ANNUAL INSP#I5749 (NPBL002106 - 2172)
- BridgeNo7_Southern_Branch_Report_Complete (NPBL0001306 - 1327)
- Ex 7 - 2024-01-24 Annual Inspection Bridge SBER (NPBL002173 - 2213)
- Ex 8 - H&H Emergency Inspection Report
- Inspection SBER (NPBL0001423 - 1483)
- Norfolk - Mechanical Inspection 2019
- NPBL Bridge Annual Inspection Report 2017 (NPBL003540 - 3706(40282284.1)
- NPBL Bridge Annual Inspection Report 2020 (NPBL001729 - 1863)
- NPBL Bridge Annual Inspection Report 2022 (NPBL001996 - 2015)
- NPBL Bridge Inpection 2021 (NPBL001867 -1995)
- NPBL Inspection 2019 (NPBL001484 - 1728)
- Invoice - Cliffs Rail - 9.25.2024 ($21K)
- INV#06498.01-11 (NPBL006828 - 6833)
- Invoice - H&H (Allision Repair) - 2.21.25 ($6k)
- Invoice - H&H (Allision Repair) - 8.1.24 ($169k)
- Invoice - H&H (Allision Repair) - 9.19.24 ($96k)
- Invoice - H&H (Allision Repair) - 10.31.24 ($50k)
- Invoice - H&H (Allision Repair) - 11.21.24 ($44k)
- Invoice - H&H (Allision Repair) - 12.26.24 ($25k)
- Invoice - H&H (Allision Repair) 4.11.25 ($879)
- Invoice - H&H (Allision Repair) 8.21.24 ($133k)
- Invoice - H&H (Allision Repair) 10.21.24 v2 ($50k)
- Invoice - H&H (Guide Rail) - 2.21.2025 ($1436k)
- Invoice - H&H (Guide Rail) - 7.12.24 ($25k)
- Invoice - H&H (Guide Rail) - 12.26.24 ($882)

- Invoice - H&H (Guide Rail) - June 2024 ($4k)
- Invoice - Burnett & Sons - 11.21.2024 ($96K)
- Invoice - Cliffs Rail - $21k
- Invoice - Cliffs Rail - 9.25.2024 ($21K)
- Invoice - Stella-Jones (ties) - 8.18.24 ($21k)
- NPBL 008038-008155
- 2025-07-29 Belt Line's Fourth Supplemental Answers to Petitioner's First Rogs
- 2025-07-29 Belt Line's Seventh Supplemental Responses
- 2025-07-29 Sixth Supplemental NPBL 26(a)(1) Disclosures
- NPBL 008176 - 2025-07-29 Updated Cost Spreadsheet
- NPBL008164
- NPBL008165-8175
- Payment Receipt - 12.13.24 - NPBL Grant 7552411-003
- Payment Receipt - H&H 11.21.24 - Grant 75524.11
- PCL 5524004-009 01-25 $1,632,440.06 (NPBL006838 - 6888)
- Invoice - PCL - 3.31.25 ($430k)
- Invoice - PCL - 3.31.2025 ($430k)
- Invoice - PCL - 6.30.24 ($271k)
- Invoice - PCL - 7.31.2024 ($1.150M)
- Invoice - PCL - 7.31.2024 ($29k)
- Invoice - PCL - 8.31.24 ($1.2M)
- Invoice - PCL - 9.30.24 ($1.18M)
- Invoice - PCL - 10.31.24 ($4.5M)
- Invoice - PCL - 11.30.2024 ($784k)
- PCL 5524004-010 02-25 $719,259.08 (NPBL006889 - 6940)
- 2018 - 2024 Repair Invoices (NPBL000999 - 1305)
- jordan bridge video npbl006677
- NPBL Initial Production
- NPBL 1st supplemental production
- NPBL 2nd supplemental production
- NPBL 3rd supplemental production
- NPBL 4th supplemental production
- NPBL 5th supplemental production
- NPBL - Carver's 1st RFAs to NPBL _ 7.17.2025 _ vF(41282603.1
- WN Marianos Site Visit Photographs

Exhibit E – Examples of Class I Railroad Depreciation Submissions to STB

SURFACE TRANSPORTATION BOARD
Office of Economics
Washington, DC 20423

PRESCRIPTION OF DEPRECIATION RATES
for
NORFOLK SOUTHERN CORPORATION ROAD PROPERTY
NS-RD-23

Rates Effective: January 1, 2023

Norfolk Southern Corporation (NS) has submitted depreciation rates for its **road property**. Life and salvage estimates supporting these rates were also provided and have been given appropriate consideration.

The depreciation rates prescribed herein replace any rates previously prescribed for the subject property. Beginning on the effective date of this prescription, the railroad is prohibited from using any rates other than those prescribed herein. As stated in *49 U.S.C. 11143*, a rail carrier may not:

(1) charge to operating expenses a depreciation charge on a class of property other than that prescribed by the Board;

(2) charge another rate of depreciation; or

(3) include other depreciation charges in operating expenses.

IT IS ORDERED:

(1) Norfolk Southern Corporation (NS) shall account for depreciation charges by applying to the ledger value of **road property**, owned and used in its operations, the annual depreciation rates shown herein.

(2) The rates shall be effective **January 1, 2023**, or until further order of the Board.

NORFOLK SOUTHERN CORPORATION Road Property	
ACCOUNT	**DEPRECIATION RATES**
NS	
03 Grading	0.91
04 Other R-O-W Expenditures	0.95
05 Tunnels and Subways	0.83
06 Bridges, Trestles and Culverts	1.07
13 Fences, Snow Sheds, and Signs	1.11
16 Station and Office Buildings	2.38
17 Roadway Buildings	2.09
19 Fuel Stations	3.06
20 Shops and Enginehouses	1.90
22 Storage Warehouses	2.50
23 Wharves and Docks	3.33
24 Coal and Ore Wharves	2.72
25 TOFC/COFC Terminals	
25.01 Lift Equipment	4.75
25.02 Other	2.63
26 Communication Systems	
26.01 PTC Equipment	5.00
26.02 Other	3.84
27 Signals and Interlockers	
27.01 PTC Equipment	5.00
27.02 Other	2.97
29 Power Plants	2.86
31 Power - Transmission Systems	2.00
35 Miscellaneous Structures	2.22
37 Roadway Machines	5.28
39 Public Improvements - Construction	
39.01 Grade Crossings	11.11
39.02 Other Public Improvements	1.33
44 Shop Machinery	3.21
45 Power-Plant Machinery	2.00

NORFOLK SOUTHERN CORPORATION Road Property	
ACCOUNT	**DEPRECIATION RATES**
FORMER PRR	
03 Grading	1.99
04 Other R-O-W Expenditures	1.48
05 Tunnels and Subways	1.36
06 Bridges, Trestles and Culverts	2.41
07 Elevated Structures	7.92
13 Fences, Snow Sheds, and Signs	2.07
16 Station and Office Buildings	3.48
17 Roadway Buildings	3.78
19 Fuel Stations	4.30
20 Shops and Enginehouses	3.38
24 Coal and Ore Wharves	3.07
25 TOFC/COFC Terminals	3.32
26 Communication Systems	5.79
27 Signals and Interlockers	3.73
29 Power Plants	7.12
31 Power - Transmission Systems	3.59
35 Miscellaneous Structures	3.49
37 Roadway Machines	8.79
39 Public Improvements - Construction	
39.01 Grade Crossings	19.34
39.02 Other Public Improvements	1.55
44 Shop Machinery	6.80
45 Power-Plant Machinery	7.91

Decided September 22, 2023 by the Surface Transportation Board's Accounting Board members Ramirez, Staton, Dusenberry.

SURFACE TRANSPORTATION BOARD
Office of Economics
Washington, DC 20423

PRESCRIPTION OF DEPRECIATION RATES

for

CSX TRANSPORTATION, INC.
ROAD PROPERTY CSXT-RD-15

Rates Effective: January 1, 2015

CSX Transportation, INC. (CSXT) has submitted depreciation rates for its road property. Life and salvage estimates supporting these rates were also provided and have been given appropriate consideration.

The depreciation rates prescribed herein replace any rates previously prescribed for the subject property. Beginning on the effective date of this prescription, the railroad is prohibited from using any rates other than those prescribed herein. As stated in *49 U.S.C. 11143*, a rail carrier may not:

(1) charge to operating expenses a depreciation charge on a class of property other than that prescribed by the Board;

(2) charge another rate of depreciation; or

(3) include other depreciation charges in operating expenses.

IT IS ORDERED:

(1) CSX Transportation, INC. (CSXT) shall account for depreciation charges by applying to the ledger value of road property, owned and used in its operations, the depreciation accrual rates shown herein.

(2) These depreciation rates shall be effective from **January 1, 2015,** or until further order of the Board.

CSXT ROAD PROPERTY DEPRECIATION RATES		
A/C #	**ACCOUNT NAME**	**DEPRECIATION RATES**
3	Grading	1.11
4	Other Right-Of-Way Expenditures	1.54
5	Tunnels and Subways	1.18
6	Bridges, Trestles and Culverts	1.43
13	Fences, Snow Sheds, and Signs	1.82
16	Station and Office Buildings	2.50
17	Roadway Buildings	2.63
19	Fuel Stations	3.33
20	Shops and Enginehouses	2.70
22	Storage and Warehouses	2.50
23	Wharves and Docks	2.22
24	Coal and ORE Wharves	2.08
25	TOFC/COFC Terminals	2.86
26.1	Communication Systems	5.26
26.2	Comm Sys - PTC Equipment	5.00
27.1	Signals and Interlockers	3.70
27.2	PTC Equipment	5.00
29	Power Plants	3.33
31	Power - Transmission Systems	1.82
37.1	System	12.50
37.2	Non-System	5.26
39	Public Improvements - Construction	3.57
44	Shop Machinery	4.17
45	Plant Machinery	2.86

Decided May 25, 2016, by the Surface Transportation Board, Accounting Board.

SURFACE TRANSPORTATION BOARD
PRESCRIPTION OF DEPRECIATION RATES
for
KANSAS CITY SOUTHERN RAILWAY COMPANY
ROAD PROPERTY KCS-RD-09

Rates Effective: January 1, 2009

Kansas City Southern Railway Company (KCS) submitted updated average remaining lives (ARLs) for its road property (excluding track). KCS proposes to use the updated ARLs to amortize the variance between book accumulated depreciation and the calculated guideline for each account. The submitted ARLs are based on the average service lives that were used to develop the depreciation rates approved by the STB July 20, 2007. The calculations supporting these ARLs were provided and have been given appropriate consideration.

The depreciation rates prescribed herein replace any rates previously prescribed for the subject property. Beginning on the effective date of this prescription, the railroad is prohibited from using any rates other than those prescribed herein. As stated in *49 U.S.C. 11143*, a rail carrier may not:

(1) charge to operating expenses a depreciation charge on a class of property other than that prescribed by the Board;

(2) charge another rate of depreciation; or

(3) include other depreciation charges in operating expenses.

IT IS ORDERED:

(1) Kansas City Southern Railway Company (KCS) shall account for depreciation charges by applying to the ledger value of road property (excluding track), owned and used in its operations, the annual component percentage rates shown herein.

(2) The rates shall be effective from **January 1, 2009, through December 31, 2011**, or until further order of the Board.

(3) KCS shall amortize the variance between book accumulated depreciation and the calculated guideline over the average remaining life of its road property (excluding

track) through use of the "Depreciation Rates Including Accumulated Depreciation True-Up" shown herein.

KCS-RD-09 2

KCS ROAD PROPERTY DEPRECIATION RATES		
ACCOUNT	**ACCRUAL RATES**	**DEPN RATES INCLUDING ACCUM DEPN TRUE-UP**
KCSR		
3. Grading	0.77	0.75
4. Other Right-Of-Way Expenditures	1.67	1.19
5. Tunnels and Subways	1.00	0.29
6. Bridges, Trestles and Culverts	1.25	1.13
13. Fences, Snow Sheds and Signs	1.54	1.34
16. Stations and Office Buildings	2.27	2.14
17. Roadway Buildings	1.82	0.83
18. Water Stations	---	---
19. Fuel Stations	3.33	3.15
20. Shops and Enginehouses	1.33	1.07
23. Wharves and Docks	17.05	23.30
25. TOFC/COFC Terminals	2.50	1.88
26. Communication Systems	1.90	1.34
27. Signals and Interlockers	2.42	2.19
29. Power Plants	---	---
31. Power Transmission Systems	2.00	1.42
35. Miscellaneous Structures	2.22	0.11
37. Roadway Machines	3.80	1.95
39. Public Improvements Construction	1.98	1.81
44. Shop Machinery	2.11	0.68
45. Power Plant Machinery - KCSR	2.22	0.53
MSLLC		
3. Grading	0.77	0.74
6. Bridges, Trestles and Culverts	1.25	1.08
13. Fences, Snow Sheds and Signs	1.54	0.73
26. Communication Systems	1.90	1.20
27. Signals and Interlockers	2.43	2.37

39. Public Improvements Construction	2.00	1.85

Decided December 23, 2009 by the Surface Transportation Board, Accounting Board.

SURFACE TRANSPORTATION BOARD

PRESCRIPTION OF DEPRECIATION RATES

for

SOO LINE RAILWAY COMPANY

BRIDGE & TRACK PROPERTY

SOO-TR-18

Depreciation Rates Effective: January 1, 2018

SOO Line Railway (SOO) has submitted proposed depreciation rates to be used to depreciate its bridges and track property. Life and salvage estimates supporting these depreciation rates were approved in conjunction with **SOO-TR-18**.

The depreciation rates prescribed herein replace any depreciation rates previously prescribed for the subject property. Beginning on the effective date of this prescription, the railroad is prohibited from using any depreciation rates other than those prescribed herein. As stated in *49 U.S.C. 11143*, a rail carrier may not:

(1) charge to operating expenses a depreciation charge on a class of property other than that prescribed by the Board;

(2) charge another rate of depreciation; or

(3) include other depreciation charges in operating expenses.

IT IS ORDERED:

(1) SOO Line Railway (SOO) shall calculate depreciation for SOO bridges & track property, owned and used in its operations, using the depreciation rates shown herein.

(2) The amortization amounts shall be reported in the SOO R-1 Schedules as directed in Depreciation Message January 15, 2016.

(3) The depreciation rates shall be effective from **January 1, 2018,** or until further

order of the Board.

SOO-TR-18 2

TABLE 1. CURVES, ASLs, DEPRECIATION RATES FOR SOO PROPERTY

ACCOUNT		CURVE	ASL	DEPRECIAT. RATE
6	Bridges, Trestles, & Culverts	R3	77	1.30
8 I	Ties Density I	R4	31	4.52
8 II A	Ties Density IIA	R4	35	3.86
8 II B	Ties Density IIB	R2.5	38	3.95
8 II C	Ties Density IIC	R3	41	4.14
8 II D	Ties Density IID	R2	45	3.55
8 II E	Ties Density IIE	S1.5	53	3.59
8 IV	Ties Density IV	R2.5	60	2.84
9 I	Rail/OTM Density I	R1.5	30	3.13
9 II A	Rail/OTM Density IIA	R2.5	35	2.89
9 II B	Rail/OTM Density IIB	L1.5	42	2.36
9 II C	Rail/OTM Density IIC	R3	45	2.22
9 II D	Rail/OTM Density IID	L2.5	50	1.96
9 II E	Rail/OTM Density IIE	R1	58	1.75
9 IV	Rail/OTM Density IV	L2	60	1.64

11I	Ballast Density I	R4	47	2.13
11IIA	Ballast Density IIA	S4	50	2.00
11IIB	Ballast Density IIB	S6	54	1.85
11IIC	Ballast Density IIC	R1.5	54	1.85
11IID	Ballast Density IID	S1.5	55	1.82
11IIE	Ballast Density IIE	S0.5	58	1.72
11IV	Ballast Density IV	S1.5	80	1.25

Decided August 1, 2018, by the Surface Transportation Board, Accounting Board.

Exhibit F – RLBA Analysis of H&H Design Sheets

MLRB Steel Quantities--for structure component replacement (From Design Sheets)

Component	Number	Drawing	Size	Weight/foot	Approx. Length (ft)	Weight
Truss Components:						
L3U3	2	S-010	W14x61	61	32	3904
L2U2	1	S-010	W14x90	90	32	2880
L2U3	2	S-010	W12x210	210	37.5	15750
L2U1	1	S-010	W14x90	90	37.5	3375
Lower Chord	2					21534
Sway U3 Strut	2	S-005	L3.5x4x3/8	9.1	17.833	325
Sway U3 /Diagonals	4	S-005	L3.5x4x3/8	9.1	5.864583	213
Sway U3 top conn. Pls	2	S-005	3/8"x16"	20.4	2.167	88
Conn. Angles top	4	S-005	L3.5x4x3/8	9.1	2.167	79
Conn. Angles end	4	S-005	L3.5x5x3/8	10.4	2	83
Sway U3 bot conn. Pls	2	S-005	0.5" x 17.5"	29.75	2	119
Sway U3 ctr. Conn. Pls	1	S-005	0.5" x 1.25'	25.5	1.8333	47
Sway U2 Strut	1	S-005	L3.5x4x3/8	9.1	17.833	162
Sway U2 /Diagonals	4	S-005	L3.5x4x3/8	9.1	5.864583	213
Sway U2 top conn. Pls	2	S-005	3/8"x16"	20.4	2.167	88
Conn. Angles top	4	S-005	L3.5x4x3/8	9.1	2.167	79
Conn. Angles end	4	S-005	L3.5x5x3/8	10.4	2	83
Sway U2 bot conn. Pls	2	S-005	0.5" x 17.5"	29.75	2	119
Sway U2 ctr. Conn. Pls	1	S-005	0.5" x 1.25'	25.5	1.8333	47
Sway U3 diagonal	2	S-006	L3.5x4x3/8	9.1	5.864583	107
Sway U4 diagonal	2	S-006	L3.5x4x3/8	9.1	5.864583	107
Bot. laterals long	3	S-013	WT4x24	24	28.25	2034
Bot. lateral short	10	S-013	WT4x24	24	14.5	3480
Bot. lat. Ctr conn. Plate	4	S-013	3/8"x30"	38.25	4.75	727
Bottom lateral gusset pl	6	S-014	3/8"x24"	30.6	1.25	230
Bottom lateral end pl.	2	S-014	3/4"x20"	34	2.25	153
Top lateral U3U2	1	S-004	MC18x42.7	42.7	27.8	1187
U1' Top Struct Center Gusset	1	S-007	3/8"x24"	30.6	3.75	115
					Total:	57,328

L3L3:						
Web Splice Plate (outer)	2	S-008	3/4"x20.25"	51.6375	4.90625	507
Web Splice Plate (inner)	2	S-008	3/4"x12.75"	32.5125	4.90625	319
Fill Plate 1	2	S-008	3/8"x9 1/4"	11.7938	1.541667	36
Fill Plate 2	2	S-008	3/8"x12.75"	10.8375	3.59375	78
Fill Plate 3	2	S-008	1/16"x16.25	3.45313	2.3125	16
Flange Splice Plate	2	S-008	3/4"x16.25"	41.4375	4.90625	407
Web Splice Plate (outer)	2	S-009	3/4"x20.25"	51.6375	4.916667	508
Web Splice Plate (inner)	2	S-009	3/4"x12.75"	32.5125	4.916667	320
Fill Plate 1	2	S-009	7/8"x12.75"	37.9313	3.59375	273
Fill Plate 2	2	S-009	3/8"x9.25"	11.7938	1.541667	36
Fill Plate 3	2	S-009	1/16"x16.25	3.45313	2.3125	16
Flange Splice Plate	2	S-009	3/4"x16.25"	41.4375	4.916667	407
Top and Bottom Angles	4	S-009	L5x5x3/8	12.3	32.25	1587
Web Plate 1	2	S-009	5/8"x20.25"	43.0313	32.25	2776
Web Plate 1	2	S-009	1/2"x20.25"	34.425	32.25	2220
12" Batten Plate	4	S-009	3/8"x12"	15.3	1.25	77
9" Batten Plate	16	S-009	3/8"x9"	11.475	1.25	230
L2' Gusset Plate	2	S-011	1/2"x53.75"	91.375	5.23	956
Floor System Components:						
Stringers	7	S-019	W33x152	152	22	23408
Connection Angles	14	S-019	L6x6x5/8	24.2	2.5	847
Stringer Diaphragm	6	S-020	W27x84	84	6.302083	3176
Stringer Lateral Bracing	10	S-020	L5x3.5x3/8	10.4	8.177083	850
Stringer Connection Plates	6	S-020	3/8"x15"	19.125	2.833	325
Stringer Connection Plates	6	S-020	3/8"x15"	19.125	0.75	86
Diaphragm Connection Angles	24	S-020	L4x4x3/8	9.8	1.75	412
Floorbeam Flange Angles	8	S-021	L6x6x5/8	24.2	17.666	3420
Floorbeam Webs	2	S-021	3/8"x48"	61.2	17.666	2162
Top Coverplates	2	S-021	1/2"x13"	22.1	17.66	781
Bottom Coverplates	2	S-021	1/2"x13"	22.1	14.75	652
Stiffener Angles	12	S-021	L3.5x5x3/8	10.4	4	499
End Fill Plates	8	S-021	5/8"x7"	14.875	3	357
Connection Angles	8	S-021	L4x4x5/8	15.7	4	502
					Total:	37,478

Counterweight Guide:						
Counterweight Guide	2	S-022	WT5x56	56	57.334	6421
Bracket Angle	18	S-022	L4x4x3/8	9.8	1.25	221
Bracket Angle	18	S-022	L5x5x3/8	12.3	1	221
Plate	18	S-022	3/8"x12	15.3	1.25	344
					Total:	7,208
Span Guide:						
Span Guide 1:	2	S-024	7/8"x8"	23.8	8.5	405
Span Guide 2:	2	S-024	2.5"x5.125"	43.5625	8.5	741
					Total:	1,145
					Total:	103,158

Proportions:	Percentage	Replacement Cost Estimate
Truss Members	55.57%	$ 3,212,248
Floor System	36.33%	$ 2,100,013
Counterweight Guide	6.99%	$ 403,863
Span Guide	1.11%	$ 64,167

Exhibit G – Infra-Metals Invoices

Steel Quantity Summary from Invoices

Invoice	Supplier	Date	Item	Weight (lbs)
2405084	Infra-Metals	8/20/24	3/8" plate	14707
2405085	Infra-Metals	8/20/24	W24x146	9069
2407082	Infra-Metals	8/23/24	plate	740
2407083	Infra-Metals	8/23/24	W12x210	10500
2407084	Infra-Metals	8/23/24	W12x210	10500
2407085	Infra-Metals	8/23/24	W14 sections	14620
2407496	Infra-Metals	8/26/24	Angles	42020
2408238	Infra-Metals	8/27/24	W8 sections	72
2408929	Infra-Metals	8/28/24	W8 sections	7128
2408930	Infra-Metals	8/28/24	W33x152	20368
2409623	Infra-Metals	8/29/24	plate	8168
2410219	Infra-Metals	8/30/24	plate	1634
2410220	Infra-Metals	8/30/24	plate	9089
2410922	Infra-Metals	9/3/24	plate	3
2410923	Infra-Metals	9/3/24	W33x152	152
2416171	Infra-Metals	9/13/24	Angle	5
2416172	Infra-Metals	9/13/24	Angle	324
2416173	Infra-Metals	9/13/24	MC18x42.7	21
2416174	Infra-Metals	9/13/24	plate	8305
2416175	Infra-Metals	9/13/24	misc	20578
2418081	Infra-Metals	9/18/24	W14x90	4050
2419640	Infra-Metals	9/20/24	south tower leg W sections	5155
2419641	Infra-Metals	9/20/24	plate	1298
2420881	Infra-Metals	9/24/24	south tower leg W sections	4400
2424242	Infra-Metals	10/2/24	Angle	3131
2424243	Infra-Metals	10/2/24	MC18x42.7	1687
2424244	Infra-Metals	10/2/24	plate	570
2425080	Infra-Metals	10/3/24	plate	9089
2426079	Infra-Metals	10/7/24	W27x84	4200
2426798	Infra-Metals	10/8/24	plate	7270
2426799	Infra-Metals	10/8/24	plate	9802
2427514	Infra-Metals	10/10/24	plate	340
2427515	Infra-Metals	10/10/24	L6x6x5/8	25168
2432061	Infra-Metals	10/21/24	channel and plate	3332
2436658	Infra-Metals	10/30/24	W33x152	6840
			Total:	**264,335**

Exhibit H – RLBA Rates

Principal – Charles Banks	**$ 450**	**$ 625**
Senior Professional – Nick Marianos /Charlie Cunningham	**$ 450**	**$ 625**
Intermediate Professional – Keith Bruno	**$ 350**	
Analyst – Jace Miyagi	**$ 275**	
Support Staff	**$ 75**	